



BRIEFING DOCUMENT

2020 Climate Leadership Campaign

“2050 by 2020” *and*

A SUCCESSFUL STRATEGY TO REDUCE CARBON EMISSIONS BY 80% BY 2020

At the heart of the 2020 Climate Leadership Campaign are two essential goals:

1. Our strategic goal is “2050 by 2020”. What our governments are negotiating in the Copenhagen negotiations – reducing carbon emissions by 80% by 2050 -- must be achieved by 2020 for the world to have any meaningful impact on stopping global warming.
2. Our operational goal is to come up with a roadmap containing the strategic areas for action that can achieve an 80% reduction in carbon emissions by 2020 and to prototype a process that has built in the flexibility and adaptiveness to be able to adjust to a moving target as the science and conditions develop. We have summarized the beginnings of the operational plan of action in seven solution areas listed below.

We already know what needs to be done to reduce CO2 emissions 80% by 2020 and align our lifestyles with the natural systems of the earth. We can achieve this using technologies that are available today. All that is needed is leadership. Our 2020 Climate Leadership Campaign is designed to catalyze this leadership.

The Belo Horizonte Forum brings together specialists from around the world and Brazil for three days to develop a **2020 Plan of Action**.

One of the starting points for our deliberations will be the seven solution areas to achieve our 2020 goal set out in the Appendix. These will be supplemented, modified, refined and adapted by the 200 participants during the Forum. The resulting action plan will be further developed at the State of the World Forums in Washington, D.C. February 28 – March 3, 2010 and in Rio de Janeiro August 30 – September 3, 2010 as well as by national mobilizations around the world.

1. “2050 by 2020” Call to Action

At the heart of our *Climate Leadership Campaign* and the purpose of the Belo Horizonte conference is resolving the contradiction between what our governments are negotiating and what our scientists are asserting about the accelerating pace of global warming. This is why climate leadership is so crucial. Most governments talk about the urgency of global warming and then make vague commitments to reduce carbon emissions by 80% by 2050. The unfortunate truth is that the official negotiations going into Copenhagen are unlikely to result in an agreement by December.

In the meantime, CO₂ emissions continue to increase and are projected in most 2050 scenarios to do so until they peak at around 2030. This basically allows business as usual for another twenty years. And yet, our scientists now tell us that the current world situation with regard to climate change is worse than the worst cast scenario of the IPCC in its 2007. So the situation is becoming more urgent with every day that passes, and serious action is needed NOW.

Even more troubling is the fact that even if the governments *are* successful in reducing carbon emissions by 80% by 2050, this will not be enough. *According to a recent study by MIT, if all the governments completely fulfill their current promises (i.e. essentially to reduce carbon emissions by 80% by 2050) CO₂ levels will have reached over 600 ppm by then and global temperatures will have risen at least 4°C.*

This contradiction between what the governments are negotiating and what the science says is the most crucial fact in the climate change crisis today. According to the 2006 Stern report and numerous other models, a rise of 4°C would mean:

- hundreds of millions of people at risk of coastal flooding each year with sea level rises of up to 25 meters

- dramatic reductions in water availability and increased droughts around the world
- a radical decline in agricultural yields resulting in severe food shortages worldwide
- some 20-50% of all animal and plant species would face extinction.

It is for these and other reasons that when he accepted the 2007 Nobel Peace Prize on behalf of the IPCC, Dr. Rajendra Pachauri said *"If there's no action before 2012, that's too late. What we do in the next two to three years will determine our future. This is the defining moment."* Thousands of scientists around the world agree. Lester Brown, who will keynote our conference, states bluntly that we are facing the demise of human civilization itself if we do not take action now

To have any impact on global warming, the world must reduce carbon emissions by 80% by 2020. This would keep the concentration of CO₂ in the atmosphere - already at 384 parts per million (ppm) - from exceeding 400 ppm, thus keeping any rise in future global temperatures to a minimum.

2. Reducing Carbon Emissions by 80% by 2020.

Action to reduce carbon emissions fall into two basic categories:

- **The first category focuses on activities like improving energy efficiency, replacing fossil fuels with renewable energy, and cleaning up the environment.** *Plan B 4.0*, by Lester Brown, the Founder of Earth Policy Institute, lays out a strategy for how the world can reduce carbon emissions by 2020 with existing technology. For a summary of these actions, see the Appendix.
- **The second category concerns lifestyle changes and developing a culture of sustainability and local resilience.** These are based on an integral approach to our climate crisis which seeks to align our inner motivations with our behavior, both individually and collectively.

Our goal is both to reduce carbon emissions and to create a culture in which we can align our lives and our economies with the natural systems of the earth.

While the first category concerns what we can do at national and industry level, the second concerns what we believe and how we live our lives - in other words, it has to do with our *interiors*. This is an important part of what we mean by "Climate Leadership." Our leadership must be as personal as it must be public. It must affect our lifestyles as much as it affects public policy. We cannot reduce

carbon emissions by 80% and develop climate prosperity by 2020 without coming to terms with the stark fact that our lifestyles and our cultural beliefs are as unsustainable as our corporate activities and our national policies.

To deal decisively with global warming, we must take an *integral* approach which looks at our interiors as much as our exteriors, our beliefs as much as our actions. All aspects are integrally involved in both our crisis and our solution. We will thus be using an integral framework for our 2020 scenario planning. Climate leadership must be integral leadership.

APPENDIX - THE SEVEN SOLUTION AREAS OF OUR 2020 CLIMATE LEADERSHIP CAMPAIGN

1) Reducing reliance on fossil fuels

Global warming is due to our addiction to fossil fuels, which comprise 80% of our economies. Virtually everything human beings do from the way they prepare their food, heat their homes, transport themselves, and consume products and services is based on use of fossil fuels. All our plastics, for example, are based on petroleum and so are most of our cosmetics. We must understand that our way of life is releasing 70 million tons of CO₂ into the atmosphere every day. To stop this we have to stop using fossil fuels.

One effective way to do this is to begin to **tax carbon emissions while simultaneously creating tax incentives for clean technologies and renewable energy**. Environmental tax restructuring has been going on for some time in Europe. A four-year plan adopted in Germany in 1999 systematically shifted taxes from labor to energy. By 2003, this plan had reduced annual CO₂ emissions by 20 million tons and helped to create approximately 250,000 additional jobs. It also accelerated growth in the renewable energy sector, creating some 64,000 jobs by 2006 in the wind industry alone, a number that is projected to reach 103,000 by 2010. Between 2001 and 2006, Sweden shifted an estimated \$2 billion in taxes from income to environmentally destructive activities. This shift of some \$500 per household came from hikes in taxes on electricity, fuel, and CO₂ emissions. The government estimates that without carbon taxes, emissions would be 20% higher than they are now. Other countries using tax shifting include Denmark, the Netherlands, Italy, Norway, and the United Kingdom.

2) Implementing energy efficiencies

Simply conserving energy is the quickest and most effective way to stop global warming. Most homes and offices lose 40-50% of their energy simply because windows and doors are not insulated and the structure of the building and the materials used are not designed for energy conservation. In the US, for example, buildings use roughly 70% of all electricity consumed and produce 40% of the CO₂ released. Simply retrofitting buildings and making them more energy efficient would save 20-40% of CO₂ emissions. Individuals can switch to compact fluorescent lighting, unplug electronic devices when not in use, invest in proper insulation and replace older refrigerators to newer more energy efficient models.

Investing in energy efficiency to offset increasing energy demand is often cheaper than expanding the energy supply to meet that demand. Efficiency investments typically yield a high rate of return and can help fight climate

change by avoiding additional CO₂ emissions. In stark contrast to the International Energy Agency's projected 30% growth in global energy demand by 2020, realizing efficiency measures alone would lead to a 6% decline in global primary energy demand from 2006 levels by 2020. Beyond these productivity gains, because producing power from fossil fuels generates large amounts of waste heat (and wasted heat equals wasted energy), simply shifting from fossil fuels to renewables would further reduce primary energy demand in the energy economy.

3) Developing renewable energy

While capitalizing on energy efficiency measures allows the world to off-set the projected increase in energy demand, switching to renewable sources of energy puts us on the path to slashing net carbon dioxide emissions 80 percent by 2020 and shifting the basis of human civilization to energy sources that are clean, renewable and sustainable. The first priority is to replace all coal- and oil-fired electricity generation with renewable energy sources. Just as the nineteenth century belonged to coal and the twentieth century to oil, the twenty-first century must belong to the sun, the wind, and energy from within the earth. The major renewable energy sources:

Wind Energy: World wind electricity generating capacity has expanded from 17,000 megawatts in 2000 to over 100,000 megawatts in 2008. At the country level, Germany has installed the most wind power, with 22,000 megawatts supplying 7 percent of its electricity. Next come the United States, Spain, India, China, and Denmark. Denmark leads the world in the national share of electricity from wind, now at 20 percent. Its goal is to push that to 50 percent, with most of the additional power coming from offshore wind farms.

Solar: Production of solar cells that directly convert sunlight into electricity is doubling every two years. Worldwide, cumulative production now tops 12,400 megawatts. While many of the initial installations were off the electrical grid, utilities are now beginning to capitalize on the enormous otherwise- unused area of rooftops as a ready source for distributed power generation. Concentrated solar thermal power projects, which capture heat from sunlight to generate steam that drives a turbine generation, show that producing electricity from the sun on a large scale can be profitable. Algeria, now a leading oil exporter, has plans to develop 6,000 megawatts of solar thermal electric generating capacity for export to Europe via undersea cable. A project on that scale could meet the household electricity demand of a country the size of Portugal.

Geothermal: It is widely known within the energy community that there is enough solar energy reaching the earth each hour to power the world economy for one year, but few people know that the heat in the upper six miles of the earth's crust contains 50,000 times as much energy as found in all the world's oil and gas reserves combined. The potential of geothermal energy to provide electricity, to heat homes and greenhouses, and to supply process heat for industry is vast. Iceland currently heats close to 90 percent of its homes with energy from the earth. In the Philippines, 25 percent of electricity comes from geothermal power plants. In El Salvador the figure is 22 percent. Other countries rich in geothermal energy are those bordering the Pacific in the so-called Ring of Fire, including Chile, Peru, Mexico, the United States, Canada, Russia, China, Japan, Indonesia, and Australia, as well as the countries along the Great Rift Valley of Africa and those around the Eastern Mediterranean. A 2006 Massachusetts Institute of Technology study found that for the United States, an investment of \$1 billion in geothermal research and development – roughly the cost of one coal-fired power plant – could yield 100,000 megawatts of electricity generating capacity from enhanced geothermal systems by 2050, the equivalent of 250 coal-fired power plants.

4) Creating clean technologies

There are a host of clean technologies emerging that are not dependent on fossil fuels and therefore do not pollute the atmosphere with CO₂. These include renewable energy, information technology, green transportation, electric motors, green chemistry and energy efficient appliances and technologies. The purpose of clean technologies is to dramatically reduce the use of natural resources and cut if not eliminate emissions and waste. The three main clean technology sectors are solar photovoltaics, wind power, and biofuels.

Investments in clean technologies are burgeoning. Biofuel companies alone received a record \$148 billion in 2007 alone. Over-all investment in clean energy and energy efficient technologies rose 60% from 2006 - 2007.

5) Cleaning up natural systems

Even as we shift from fossil fuels to renewable energy, we must clean up our natural systems. Almost every aspect of the world's environment - from water, soil, air, oceans, forests, and rivers - is polluted and needs to be cleaned up. In terms of global warming, the most effective short term action that can be taken is to stop cutting down our forests. In the last fifty years, we have cut down 50% of the world's forests.

Deforestation has already been banned in some areas to moderate flooding, stabilize soils, and prevent erosion. Because the world's remaining forests store massive amounts of carbon, the impetus for forest protection now goes beyond local environmental protection to global climate protection. Stopping forest destruction will involve reducing wood and paper consumption, boosting recycling, and curbing the pressures to deforest that come from population growth and the expansion of agriculture and rangelands. By ending net deforestation, we can cut 2020 CO₂ emissions by 1.5 billion tons.

A newly planted tree in the tropics can remove 50 kilograms of CO₂ from the atmosphere each year during its average lifespan of 20–50 years. A tree in the temperate regions can take in 13 kilograms. New trees planted on the 171 million hectares of degraded land that can be profitably reclaimed around the world could, by 2020, take up over 950 million tons of CO₂.

In late 2006, the UN Environment Program, inspired by Nobel Peace Prize winner Wangari Maathai, announced plans for a worldwide effort to plant 1 billion trees in one year. This initial target was easily exceeded, and by mid-2008, more than 2 billion trees had been planted in more than 150 countries. Leaders include Ethiopia with 700 million trees, Turkey with 400 million, and Mexico with 250 million.

6) Creating sustainable lifestyles

At the heart of any successful 2020 strategy is transforming our lifestyles. Ordinary citizens can all become climate leaders by coming to terms with the reality that all of our lifestyles are as unsustainable as our corporate practices and government policies. All of us are contributing to global warming and therefore all of us need to solve it. Roughly 25% of global warming is due to how we live and what we eat. That's as much as all our transportation pollution combined. For example, reducing showers by two minutes reduces carbon emissions by over 30 kilos per month.

Everything we do that is powered by fossil fuels has a CO₂ cost, and it adds up – just like credit card debt. Some actions, like commuting in a gasoline-powered car, have obvious carbon costs. Others are less clear but still significant. Take our diets, for example. Cows are responsible for an estimated 18% of global carbon emissions, so when we eat a hamburger, we are effectively emitting CO₂ as well. Even something as small as a cell phone or an iPod will add to your carbon footprint, thanks to both the energy used to produce and ship it and the energy later needed to charge it.

People can help stop global warming by limiting beef in their diet, driving or flying less, reducing the amount of power used at home whenever possible, either through conservation or with appliances that are more energy-efficient. They can also radically reduce their consumption of products. Rather than throw things away, have them fixed and use them for as long as possible. The most effective way for the common citizen to become a climate leader is to conserve energy. We must learn to increase prosperity without growth.

7) Establishing a culture of sustainable growth

We must replace the myth of growth at all costs, which is the basis of the fossil fuel economy, with the notion of prosperity without growth. The natural systems do not have to be consumed to increase our GDP. We do not have to throw everything away to generate jobs and profits. Climate protection and economic prosperity are not mutually exclusive.

Core strategies to create a vibrant economy – innovation, efficiency, strategic investment, and finding better ways to use and reuse resources – are exactly the same steps we need to cope with global climate change. These actions will increase jobs, incomes, productivity, and competitiveness, and they're all green. The idea of moving from “resource-wasting capitalism” to “resource-saving capitalism” is simply good business practice.

Numerous corporations, including DuPont, General Electric, IBM, and Nike, are practicing innovation, efficiency, and conservation to enhance their productivity and competitiveness. DuPont responded to “peak oil” by switching from petrochemicals to life science bio-products, substantially improving its profitability through saving \$3 billion and expanding revenues by producing goods that are better for the environment.

At the state level, Californians saved \$56 billion on electricity expenses over the past three decades through improved energy efficiency, primarily from state and local government policies requiring higher standards for buildings and electrical appliances and providing financial incentives for utility companies, businesses, and households to conserve energy and use renewable sources. Private consumers reinvested much of this savings in the state's economy, directly contributing to higher economic growth and greater prosperity by generating 1.5 million full-time jobs with total annual income of \$45 billion.

Summary

Cutting CO₂ emissions by 80% and creating a culture of sustainability by 2020 will require a world-wide mobilization.

- To prevent global energy demand from increasing, we must begin **massive investments in energy efficiency**.
- To cut carbon emissions we must:
 - **replace fossil fuels with renewable energy sources** for electricity and heat production (33%)
 - **restructure our transportation systems and reduce coal and oil use in industry** (14%)
 - **end deforestation worldwide** (16%)
 - **plant billions of trees and manage soils to sequester carbon** (17%)
- To become sustainable, energy efficient and resilient, we must **transform our lifestyles and create a culture of sustainability**.

If we do this, we can develop a culture of prosperity without growth based on the natural systems of the earth.

The 2020 Climate Leadership Campaign is committed to this mobilization.

For further information on the 2020 Climate Leadership Campaign:

www.Brasil2020.com.br
www.worldforum.org

For further information on Lester Brown's Plan B 4.0:

www.earthpolicy.org

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